

REMARKS

The applicant respectfully requests reconsideration in view of the amendment and the following remarks. The applicant has incorporated the features of claim 9 into claim 8. Support for newly added claims 13 and 14 can be found in the specification in Examples 1A-1C which sinter at 10 bar (see in particular, Example 1a, at page 19, line 27 of the specification). Support for newly added claims 15-18 can be found in the specification at page 17 lines 21-27 and page 18, lines 24 and 25.

Claim 8 is rejected under 35 U.S.C. §102(b) as being anticipated by Nomura (U.S. Patent No. 6,314,798) ("Nomura") and claims 9-11 are rejected under 35 U.S.C. §103(a) as being unpatentable over Nomura in view of Yeckley (U.S. Patent No. 5,508,241). The applicant respectfully traverses these rejections.

Rejection of Claim 8

Claim 8 is rejected under 35 U.S.C. §102(b) as being anticipated by Nomura. In order to expedite prosecution, the applicant has incorporated claim 9 into claim 8. For the above reasons this rejection should be withdrawn.

Rejection of Claims 9-11

Claims 9-11 were rejected under 35 U.S.C. §103(a) as being unpatentable over Nomura in view of Yeckley.

The Examiner recites what is disclosed by Nomura on page 3 to page 4, line 2 of the Office Action, which the applicant will not address, but instead will assume at this point of time is correct.

Normura does not specifically disclose that the final ceramic material would be free of at least one macroscopic defects larger than 20 μm and optical heterogeneities larger than 50 μm . The Examiner has relied upon Yeckley for these features.

Yeckley teaches a method to produce a ceramic material, wherein powdered silicon nitride as educt (col. 2, l. 45-47) and a sintering aid (alumina, col. 2, line 52) and a dispersion aid (polyvinylpyrrolidone, col. 2, lines 55 and 59) are milled, the resulting slurry being passed through a magnetic separator (col. 2, line 57) and a screen having a maximum opening of 50 μm (col.2, lines 57-58, it says 20 μm), then polyvinylpyrrolidone (PVP) is added (col. 2, line 55), the resulting slurry being dried, (col. 2, lines 60-61, dried in spray drier), granulated (col. 2, lines 61-63, passed through a nalgene screen), which is done in a clean room (col. 2, line 63) and shaped (col. 2, lines 64-67, cold isostatically pressed) and subsequently the organic additives are removed at 600⁰C in the air (col. 3, line 1, air fired at 600⁰C) and the resulting shaped article being sintered for an hour and at a pressure 20.7 MPa (which is about 2070 bar) at a temperature of up to 1790⁰C (col. 3, lines 1-4).

Yeckley distinguishes from the present invention as well as from Nomura by the facts that

- air firing at 600⁰C
- using a single step sintering procedure at high pressure, while Nomura as well as the present invention first employ a low pressure sintering and the pressure is raised in the second step, and
- the air-fired compacts are encapsulated in glass media (Yeckley, col. 3, line 2).

Consequently, even when assuming the Examiner has correctly recognized the disclosure of Nomura, the result of the Examiner's combination with Yeckley is clearly based on hindsight

since a combination of Nomura with Yeckley does not inevitably result in the present invention. To the contrary, the Examiner has picked a single of several features different from Nomura, but present in the invention, namely passing the slurry through a magnetic separator.

However, a person of ordinary skill in the art could and would have changed the process of Nomura in view of Yeckley by, for example, by encapsulating the fired compacts in glass media, since this is preferred in Yeckley (see col. 2, lines 35 to 41) for the advantages set out there and in the US patents cited, or to air fire the compacts at 600⁰C to eliminate the more costly heating at the same temperature under nitrogen of Nomura, or the person of ordinary skill in the art could have switched to a single step sintering at high pressure for the reason of process simplification as well as to accomplish shorter sintering times.

Since the step of passing the slurry through a magnetic separator is only one of several distinguishing features that a person of normal skill in the art would have used to modify Nomura, the combination of Nomura and Yeckley does not inevitably result in the process according to the present invention and consequently, the Examiner's argument is based on hindsight.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Claim 13

With respect to claim 13, the applicant claims a pressure in the first sintering step from 10 to 50 bar. As the Examiner has correctly recognized at the bottom of page 3 of the Office Action that Normura discloses a pressure of from 100 to 300 kPa (which converts to about 1 to 3 bar), in the first sintering step. Normura teaches away from the applicant's claimed invention of

claim 13. The pressure used in Yeckely is about 2070 bar which is outside the scope of the applicant's claimed pressure. Neither of the references would teach the sintering pressure in the range of 10 to 50 bar. For the above reasons, this rejection should be withdrawn.

A one month extension fee has been paid. Applicant believes no additional fees are due with this response. However, if a fee is due, please charge our Deposit Account No. 03-2775, under Order No. 13077-00122-US from which the undersigned is authorized to draw.

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Respectfully submitted,

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